

PATENT

Application of TRELL

National Phase of PCT/US2003/040015

ATTORNEY DOCKET No. 31555-2005

--"upd", "update" or "~~user programmable function~~" "user/producer programmable data" - command functions which may implement a program to input a phrase, word, symbol, command or other alphanumerical data.--

At page 7, line 11, delete the paragraph beginning with "chord" add replace it with the following paragraph:

--"chord" – the enactment of two or more keys, either at the same time or in preferably rapid succession without disengaging the earlier enacted key(s), (i.e. without lifting the finger(s) off of the earlier enacted key(s) until the final key is enacted).--

At page 7, line 14, delete the paragraph beginning with "broken chord" and replace it with the following paragraph:

--"broken chord" – the enactment of two or more keys in preferably rapid succession without disengaging the earlier enacted key(s), (i.e. without lifting the finger(s) off of the earlier enacted key(s) until the final key is enacted).--

At page 7, line 18, delete the paragraph beginning with "simultaneous enactment" and replace it with the following paragraph:

--"simultaneous enactment" – enactment of a plurality of keys at the same time, or in preferably rapid succession of each other without disengaging the earlier enacted key(s) (i.e. without lifting the finger(s) off of the earlier enacted key(s) until the final key is enacted).--

At page 10, line 29, delete the paragraph beginning with "Fig. 4" and replace it with the following paragraph:

-- Fig. 4 shows the keypad K in a Shift mode (or Caps Lock mode which can be effectuated by enacting the Shift mode twice in rapid succession; and can be released by one more enactment of the Shift mode), and is described with reference to the touch pad 1' disclosed

in Fig. 2 (or a designated area of a computer screen). This touch pad 1' has a soft keypad grid displayed there on the area for tip movements, although separate areas could be provided as well, which however here is thought uneconomical and hence not preferred, and having two click buttons 2, 2'. As in the earlier Fig.3, Fig.4 shows the alphanumeric data, punctuation, symbols and command functions are displayed on the keys. In addition, upd (update functions) or user programmable functions are shown by the enactment of keys "2" & "6", and also "3" & "5", and are provided for user/producer ad lib programming, and can of course be ad libbed differently and more than here specifically shown distributed, marked and assigned through the modes and keys; e.g. when producing a layout for non-English languages/alphabets, for example Chinese. A touch pad is touch sensitive, and so only differentiation between tip movements and key punches has to be ensured. This can be done by, for example using different click strategies, and is here not elaborated on. The devices shown in Figs.1 and 2 are shown with two click buttons 2, 2' customarily placed in the front first portion of a mouse, but one can certainly have only one click button or add more click buttons, scroll wheels, track balls etc., and locate such additional buttons or scroll wheels or track balls on the sides of the mouse, or include them in the keypad K capacity and assign specific key combinations therefor. Keys "1" and "\*" can provide the same input as the left click button of a mouse; enactment of keys "3" and "#" can provide the same input as the right click button of the mouse; and the enactment of keys "2" and "0" can provide the same input as the middle click button of a mouse or a scroll wheel with a scroll function by, for example, taking the broken chord using keys "2" and "0" broken in a downward direction (i.e. enacting key "2" first and then key "0" in rapid succession) to input a downward scroll, and also by taking the broken chord using keys "0" and "2" in an upward direction (i.e. enacting key "0" first and then key "2" in rapid succession) to input an upward scroll; which can be inputted through all the modes. --

At page 12, line 17, delete the paragraph beginning with "One can" and replace it with the following paragraph:

--One can also here state that in languages like, for example Swedish, where some non-English letters, such as "å", are very frequent used, and where the input of such (using the accent

combination) may be cumbersome and slow, a possibility for shortcuts using the redundancy of the preferred layouts exists. Thus, without limitation, the simultaneous enactment of keys “1” and “6” may (in Write/Shift mode and if user opts) input “æ” or “Æ”; the enactment of keys “1” and “9” may input “@”; the enactment of keys “1” and “#” may input “å” or “Å”; the enactment of keys “1” and “0” may input “ä” or “Ä”; and the enactment of keys “7” and “3” may input “ö” or “Ö”. In addition, the enactment or depression of a key for a continuous amount of time can give straight digits in running text. In Num mode, when entering various math expressions (e.g. 2a by 6b, cos 4, 2x=5yz etc., it could also be beneficial to offer an electable possibility to have straight (small) letters without mode change, e.g. by holding the corresponding (Write mode) key(s) down long. “Bouncing”, (i.e. rapid repetition for keys held down long), should then preferably be reserved just for some function keys.--

At page 12, line 31, delete the following paragraph beginning with "Fig. 7" and replace it with the following paragraph:

--Fig. 7 is intended to show another possible alternative, where the standard 3x3 row matrix is used (but this could also be a 4x4, 5x4 or other matrix within the available limited space, which might be useful in letter-rich non-English languages, and/or for utilizing the keys of the “extra” row[s] in for example some single key commands like Enter, Backspace, Space, Shift, Ctrl, “→”, “←”etc., but which, if brought too far, is thought to mostly lead to confusion and thus not generally preferred) layout and how it might be lettered. A further possible example of key configuration is shown in Fig. 8, in which a 2x6 row matrix is shown. The examples shown in Fig. 7 and Fig. 8 are believed to disclose that the row matrix configuration can be considerably varied and not limited to only a 3x4 matrix, while maintaining the advantages obtained by means of the present invention. Many other non-conventional keypads and input devices (e.g. non-rectangular arrangements), specific key modifications or placements, in order to facilitate diagonal enactment of multiple keys by using just one finger, are also contemplated, as also outlined where the physical mouse metaphor may no longer be so evident but the PC-

function remains, (e.g. play stations equipped with the appropriate key arrangements), which are contemplated and thought within the present inventive thought and claims. However, for understandable reasons, a single row keypad matrix would not be suitable, and the invention is thus applicable on any row matrix having at least two rows.

A mobile phone or palmtop using Bluetooth, RF (radio frequency), IR (infrared), cell etc., can also accordingly be used with the present invention (remotely, as a mouse, to a PC and/or into itself in own text entry), if introduced to it's menu some cursor managing feature, for example by it's joystick or gyroscopic motion sensor input device; and for clicks some function buttons; and also enabling it's telephone/numerical keypad for enhanced functioning as herein disclosed. If of palmtop/communicator etc. size, a given possibility also exists for the keypad to be a more fullfledged QWERTY, although such an embodiment is here thought to be less advantageous.--

At page 15, line 15, delete the paragraph beginning with "As mentioned" and replace it with the following paragraph:

--As mentioned before, the present invention makes it possible to facilitate input of a range of alphanumerical data (such as characters, numerals, symbols, functions etc.), corresponding to a conventional QWERTY keyboard, and this large range is based on simultaneous input via preferably up to two keys. However, since a user may happen (or intend) to depress three adjacent keys (forming a triangular configuration, and especially so perhaps when practicing a one hand thumb input) at the same time, out of which only two keys really were intended, the controlling software associated with the device can be arranged to select two out of these three keys based on key relationship (i.e. disregard the third key which has no function in connection with anyone of the other two keys depressed, such as the diagonal vs the straight substantially horizontal or vertical). Alternatively, the software can also be intentionally set to select the diagonal, which can make punctuation/accent etc. take, especially with just one finger, more easy, precise and quick.--